

In the Claims

5           1.       An acoustical and thermal insulator, comprising a multilayer composite including (a) a first facing material layer, (b) a polymer based blanket layer and (c) an insulation insert encapsulated by said heat reflective material layer and said polymer based blanket layer.

10           2.       The insulator of Claim 1, wherein said first facing layer is constructed from a heat reflective metallic foil having a thickness of between substantially 0.5-5.0 mil.

15           3.       The insulator of Claim 2, wherein said metallic foil includes a reinforcement.

20           4.       The insulator of Claim 3, wherein said metallic foil reinforcement is selected from a group of materials consisting of a fibrous scrim, a fibrous mat and a fibrous web.

            5.       The insulator of Claim 4, wherein said reinforcement is made from glass fiber threads arranged in a criss-cross pattern.

25           6.       The insulator of Claim 1, wherein said polymer based blanket layer is selected from a group of materials consisting of polyester, polyolefin, polyethylene, cotton shoddy, nylon, rayon, acrylic, natural fibers including kenaf and hemp, and combinations thereof with and without melt

blown microfibers.

5 7. The insulator of Claim 1, wherein said polymer based blanket layer includes a relatively high density section and a relatively low density section.

10 8. The insulator of Claim 1, wherein said insulation insert is selected from a group of materials consisting of fiberglass, foam, polymer based blanket material, natural fiber based blanket material and combinations thereof.

15 9. The insulator of Claim 1, wherein said insulation insert is positioned only at selected locations in said insulator to provide shielding of heat/sound sources.

20 10. The insulator of Claim 1, further including a second facing layer.

25 11. The insulator of Claim 10, wherein said second facing layer includes a scrim.

12. The insulator of Claim 10, wherein said second facing layer is selected from a group of materials consisting of polyester, polypropylene, rayon, nylon, glass, metal foil and mixtures thereof.

13. The insulator of Claim 11, wherein said first facing layer

and/or second facing layer is treated with a fire retardant, a biocide and/or a colorant.

5 14. The insulator of Claim 1, wherein said first facing layer includes a heat activated adhesive to secure said first facing layer to said polymer based blanket layer.

10 15. The insulator of Claim 12, wherein said heat activated adhesive is selected from a group of materials consisting of thermoplastic sheet, thermoplastic web, hot melt, latex and heat activated resins.

15 16. The insulator of Claim 10, where said second facing layer includes a heat activated adhesive to secure said second facing layer to said polymer based blanket layer.

20 17. The insulator of Claim 16, wherein said heat activated adhesive is selected from a group of materials consisting of thermoplastic sheet, thermoplastic web, hot melt, latex and heat activated resins.

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